Application No. 09/902,529
Filed: July 10, 2001
TC Art Unit: 3724
Confirmation No.: 6863

AMENDMENT TO THE CLAIMS

1. (Currently Amended) A ~~Method~~ method for perforating a non-woven sheet of fibers or filaments comprising the steps of:~~, according to which said sheet is brought into contact with a perforated cylinder, and at least one perforation is produced in the sheet by means of at least one perforating member that is driven simultaneously in translation and in rotation about its own axis, characterized, on one hand, in that there is previously fixed~~ fixing on ~~the~~ a perforated cylinder at least one insert, including, at one end, a plane surface, and provided with a recess that emerges in said plane surface, ~~and which~~ that has ~~a sharp edge formed by the intersection of the~~ an inner surface and that has a sharp edge formed by the intersection of the inner surface with the plane surface;

bringing the non-woven sheet into contact with the perforated cylinder and with the plane surface of the insert;

bringing a perforating member facing to the recess of the insert to locally compress fibers or filaments of the non-woven sheet between the perforating member and the sharp edge of the insert;

moving the perforating member in rotating movement and cutting out a portion of the non-woven sheet by shearing of the fibers or filaments of the non-woven sheet compressed between the perforating member and the sharp edge of the insert through the combined actions of rotation and pressure~~of said recess with said plane surface and, on the other hand, in that a perforation in the non-woven sheet is obtained by cutting out a portion of the non-woven sheet by shearing of the fibers or filaments of the non-woven sheet, between the sharp edge of said insert and a~~

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~~perforating member driven simultaneously in translation and in rotation about its own axis~~.

2. (Previously Presented) Method according to claim 1, characterized in that, at the time of a perforating operation, said perforating member is driven simultaneously in rotation in a first direction of rotation and in translation in a first direction opposite from the perforated cylinder, and then is driven simultaneously in rotation in a second direction of rotation opposite from said first direction of rotation and in translation in the direction opposite from the first direction of translation.

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3. (Previously Presented) Method according to claim 1, characterized in that each insert is removable.

4. (Previously Presented) Method according to claim 3, characterized in that each insert is fixed by screwing onto the perforated cylinder.

5. (Previously Presented) Method according to claim 2, characterized in that the direction of screwing of each insert corresponds to the first direction of rotation of a perforating member.

6. (Previously Presented) Method according to claim 1, characterized in that each insert comprises a plane flange.

7. (Previously Presented) Method according to claim 1, characterized in that the recess of an insert has a diameter that increases starting from the sharp edge.

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8. (Withdrawn) Apparatus for perforating a non-woven sheet (N) of the type comprising a perforated cylinder (2) and at least one perforating member (9) which is capable of being driven simultaneously in translation and in rotation about its own axis, characterized in that the perforated cylinder (2) is equipped with at least one insert (8), including, at one end, a plane surface (S), and provided with a recess (8b) that emerges in said plane surface (S), and which has a sharp edge (8g) formed by the intersection of the inner surface (8f) of said recess (8b) with said plane surface (S), and in that the perforating tool (9) is capable of cooperating with said sharp edge (8g) so as to cut by shearing the fibers or filaments of the non-woven sheet (N), between the sharp edge (8g) of said insert (8) and said perforating member (9) driven simultaneously in translation and in rotation about its own axis.

9. (Withdrawn) Apparatus according to claim 8, characterized in that said perforating member (9) is designed to be driven in rotation in a first direction of rotation (R1) when it is moved in translation in a first direction (H) opposite from the perforated cylinder (2), and to be driven in rotation in a second direction of rotation (R2) opposite from said first direction of rotation during its movement in translation in the direction (G) opposite from the first direction of translation (H).

10. (Withdrawn) Apparatus according to claim 8 or 9, characterized in that each insert (8) is removable.

11. (Withdrawn) Apparatus according to claim 10, characterized in that each insert (8) is fixed by screwing onto the perforated cylinder (2).

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12. (Withdrawn) Apparatus according to claims 9 and 11, characterized in that the direction of screwing of each insert (8) corresponds to the first direction of rotation (R1) of a perforating member (9).

13. (Withdrawn) Apparatus according to claim 8, characterized in that each insert (8) comprises a plane flange (8e).

14. (Withdrawn) Apparatus according to claim 1, characterized in that the recess (8b) of an insert (8) has a diameter that increases starting from the sharp edge (8g).

15. (Previously Presented) Method according to claim 2, characterized in that each insert is removable.

16. (Previously Presented) Method according to claim 4, characterized in that the direction of screwing of each insert corresponds to the first direction of rotation of a perforating member.

17. (Withdrawn) Apparatus according to claim 9, characterized in that each insert is removable.

18. (Withdrawn) Apparatus according to claim 11, characterized in that the direction of screwing of each insert corresponds to the first direction of rotation of a perforating member.

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